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is to bring out at least much more clearly than has before been done, the fact that between the crystalline and the oldest primordial rocks, "there is a great chronologic break, a 'lost interval' of immense duration," and also that the geological formations are oldest on the sea-board, becoming successively newer as we proceed from Massachusetts bay to the Berkshire hills in the western part of the State. Bearing these two points in mind, the volume will be read with much interest, afford food for further discussion, and doubtless will lead local geologists to a more careful study of their neighborhood. The region here treated of is most difficult to study and understand ; a flood of light has been thrown upon the subject by Mr. Crosby, and many facts which will be of constant use in future discussions are here recorded. The map especially is an excellent graphic résumé of the subject. It is not often the case that a city society does so much as the one at Boston to promote the study of local geology, in this respect it has set a most useful example to similar organizations.

BROOKS'S DEVELOPMENT OF THE OYSTER.[1]—This is the first attempt to scientifiically examine our oyster, its breeding habits and mode of development; the result is a valuable addition to our knowledge of the American oyster, and a fresh discussion of the embryology of mollusks. Dr. Brooks shows that our species, like the European, is bisexual during the breeding season, and that the general mode of development, is like that sketched out by Lovén in his studies of the development of Cardium, a bivalve mollusk.

Unlike the European species, the eggs of the American oyster undergo development in the open sea, not within the shell. The process of segmentation is remarkable for its great rapidity, for the bilateral symmetry of the germ at this period, and for the well marked alternation of periods of activity with periods of rest. The ciliated germ is formed in some cases within two hours after fertilization, but twenty-four hours is the usual time, and it may sometimes require two days to reach it. There is an invaginate gastrula state, the primitive opening (blastopore) closing completely, the shell appearing at the point which the blastopore previously occupied, while directly opposite the position of the blastopore, the mouth and then the anus of the digestive tract make their appearance. The Veliger has the general form of that of Cardium and other Lamellibranchs.

Dr. Brooks thinks that the embryology of the oyster bears out his view that Lamellibranchs must be regarded as a side branch from the main molluscan stem, of which the Gasteropods are a much more direct continuation, "and that all attempts to trace the phylogeny of the higher Mollusca through the Lamellibranchs to lower invertebrates, are erroneous and useless." We would allow this, but none the less, in our view, are the Lamellibranchs a lower, less specialized division of mollusks, than the Cephalophora and their gasteropod representatives.

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[1] *Johns Hopkins University, Baltimore. Studies from the Biological Laboratory, The Development of the Oyster.* By W. K. Brooks. No IV. Baltimore, 1880. 8vo. pp. 84. 11 plates.

The memoir on the oyster is succeeded by a brief discussion on the acquisition and loss of a food-yolk in molluscan eggs.

THOMAS'S CHINCH BUG.[1]—In this Bulletin, Professor Thomas has given the leading known facts regarding the ravages of the chinch bug, in the western corn growing States, and has collected the different views of entomologists as to the best means of prevention. The author shows by a lengthy series of statistics, that corn is injured much more than wheat. Enough for practical purposes is stated regarding the form and habits of this destructive pest, and as a brief manual, showing the best means of preventing its attacks, the pamphlet is timely, and will prove most useful to western farmers. The edition of 2000 copies issued by the Department of the Interior, was at once exhausted, and a new and much larger edition has been ordered by Congress. This is an evidence of the demand throughout the country for accurate information concerning this injurious insect, of the great need of careful, widely extended and comparative studies upon the other more destructive forms, and the wide diffusion of such knowledge among those most interested.

THE GEOLOGIGAL RECORD.[2]—This valuable publication is again before us, and we bespeak for it the support of geologists and scientific men generally. Publications of this character are necessary for the student, and hence to the progress of science. They are not published for profit, and their editors are chiefly rewarded by a sense of their usefulness. While we congratulate the editor of the *Geological Record* on the general result of his work, we must encourage some of his collaborators to a little more care in some important details. Thus (p. 279) it is stated that among the "new" species of *Mammalia* described in the quarto report of Lieut. Wheeler, is "an undeterminable species of *Protohippus*!" Same page, bottom, it is stated that a paper "describes the generic characters of *Erisichthe*, adding specific descriptions," etc. "No age or locality given." The paper quoted states that the genus and one of the species are from the Niobrara Cretaceous of Kansas. Page 280, a list of species is given ending with *Monoclonius crassus*, which are said to be "new species founded on *Dinosaurian* teeth." The *M. crassus* was, as stated in the paper,

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[1] *Department of the Interior, United States Entomological Commission, Bulletin No. 5. The Chinch Bug : its history, character and habits, and the means of destroying it or counteracting its injuries.* By Cyrus Thomas, Ph.D., Washington, 1879. 8vo, pp. 44, with a map.

[2] *The Geological Record for* 1877, *with supplements for* 1874–6. Edited by W. WHITTAKER, F.G.S. London, Taylor & Francis.